

EXTERNALLY EXCITED TORROIDAL  
PLASMA SOURCE

ABSTRACT OF THE DISCLOSURE

5 A plasma reactor for processing a workpiece, including  
an enclosure defining a vacuum chamber, a workpiece support  
within the enclosure facing an overlying portion of the  
enclosure, the enclosure having at least first and second  
openings therethrough near generally opposite sides of the  
10 workpiece support. At least one hollow conduit is connected  
to the first and second openings. A closed torroidal path  
is provided through the conduit and extending between the  
first and second openings across the wafer surface. A  
process gas supply is coupled to the interior of the chamber  
15 for supplying process gas to the torroidal path. A coil  
antenna is coupled to an RF power source and inductively  
coupled to the interior of the hollow conduit and capable of  
maintaining a plasma in the torroidal path.

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